



303481

**RECORD OF DECISION
for the
Site - 16 Navy Small Arms Range, Building 61**

**NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS**

RECEIVED

JUN 30 2008

IEPA-BOL-FSRS

**Submitted to:
Illinois Environmental Protection Agency
1021 N. Grand Avenue
Springfield, IL 62702**

**Submitted by:
Naval Facilities Engineering Command, Midwest
201 Decatur Avenue, Building 1A
Great Lakes, IL 60088-2801**

February 2008

Prepared Under the Supervision of:

**Howard M. Hickey
Program Line Coordinator M-Line/RPM
Naval Facilities Engineering Command Midwest**

**Mark R. Schultz
Environmental Business Line Coordinator/Environmental Director
Naval Facilities Engineering Command Midwest/CNR N40**



TETRA TECH

PITT-04-8-048

April 29, 2008

Project 112G01021

Dept of the Navy
Naval Station Great Lakes
NAVFAC MW Code EV
Attn: Howard Hickey
201 Decatur Ave.
Building 1A
Great Lakes, IL 60088

Reference: CLEAN Contract No. N62467-04-D-0055
Contract Task Order 0474

Subject: Final Record of Decision
Site - 16 Navy Small Arms Range, Building 61
Former Naval Air Station (NAS) Glenview
Glenview, Illinois

Dear Mr. Hickey:

Please find attached three copies of the subject report. Copies have also been distributed as indicated below. The signed title page and authorizing signature page will be provided when these pages are completed.

If you have any questions, please call me at 412-921-7251.

Sincerely,

Robert F. Davis, P.E.
Task Order Manager

RFD/clm

Enclosure

cc: O. Thompson, USEPA Region 5
(2 copies – to be submitted after title and authorizing signature pages are signed)
B. Conrath, Illinois EPA (3 copies)
J. Trepanowski, TtNUS (1 copy)
File 01021/CTO 474, TtNUS (1 copy)
M. Mengel, TtNUS (1 copy)
G. Wagner, TtNUS (1 copy Administrative Record)

Tetra Tech NUS, Inc.

661 Andersen Drive, Pittsburgh, PA 15220-2745
Tel 412.921.7090 Fax 412.921.4040 www.ttnus.com

TABLE OF CONTENTS

ACRONYMS & ABBREVIATIONS	iii
1.0 DECLARATION	1-1
1.1 SITE NAME AND LOCATION.....	1-1
1.2 STATEMENT OF BASIS AND PURPOSE.....	1-1
1.3 ASSESSMENT OF THE SITE	1-1
1.4 DESCRIPTION OF THE SELECTED REMEDY	1-1
1.5 STATUTORY DETERMINATIONS	1-1
1.6 AUTHORIZING SIGNATURES.....	1-2
2.0 DECISION SUMMARY	2-1
2.1 SITE NAME, LOCATION, AND DESCRIPTION	2-1
2.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES.....	2-1
2.3 HIGHLIGHTS OF COMMUNITY PARTICIPATION.....	2-1
2.4 SCOPE AND ROLE OF ACTION	2-5
2.5 SUMMARY OF SITE CHARACTERISTICS	2-5
2.5.1 GEOLOGY	2-5
2.5.2 HYDROGEOLOGY.....	2-6
2.5.3 NATURE AND EXTENT OF CONTAMINATION.....	2-6
2.5.3.1 Soil	2-6
2.5.3.2 Groundwater	2-7
2.6 SUMMARY OF SITE RISKS.....	2-7
2.7 FUTURE LAND USE	2-9
3.0 RESPONSIVENESS SUMMARY	3-1
3.1 COMMUNITY PREFERENCES.....	3-1
3.2 INTEGRATION OF COMMENTS	3-1
3.3 COMMENT RESOLUTION.....	3-1
REFERENCES.....	R-1
APPENDIX A: Pre-Removal Lead Contamination Locations.....	A-1
APPENDIX B: Excerpt from <i>Remedial Action Completion Report: Removal and Disposal of Contaminated Soil, Building 61 Demolition Site; Section 5.0 Post-Excavation Confirmation Sampling and Analysis (TOLTEST 2003—Revised 2007)</i>	B-1
APPENDIX C: Responsiveness Summary - Navy Response to Illinois Environmental Protection Agency Comments	C-1

LIST OF FIGURES

Figure 2 - 1: Naval Air Station Glenview Vicinity Map.....	2-2
Figure 2 - 2: Site 16 Vicinity Map	2-3
Figure 2 - 3: Site 16 Location Map	2-4
Figure A-1: Sample Locations for Lead Contamination Areas (Ensafe, 2001).....	A-2
Figure A-2: Proposed Soil Removal Areas (Ensafe, 2001).....	A-3
Figure 4 in Appendix B: Confirmation Sampling Location Map.....	B-3

ACRONYMS AND ABBREVIATIONS

ARAR	Applicable or Relevant and Appropriate Requirement
bgs	Below Ground Surface
BCT	BRAC Closure Team
BRAC	Base Realignment and Closure
CA	Corrective Action
CERCLA	Comprehensive Environmental Response, Compensation, & Liability Act
CIP	Community Involvement Plan
COPC	Contaminant of Potential Concern
CRP	Community Relations Plan
CS	Confirmatory Sampling
CY	Cubic Yards
DoD	Department of Defense
E/A & H	EnSafe/Allen and Hoshall
EBS	Environmental Baseline Study
E & E	Environment and Ecology
HQ	Hazard Quotient
Illinois EPA	Illinois Environmental Protection Agency
IRP	Installation Restoration Program
LLC	Limited Liability Company
mg/kg	milligrams per kilogram
MRBC	Modified Risk-Based Concentrations
NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NFA	No Further Action
PCB	polychlorinated biphenyl
PPV	Public Private Venture
QA	Quality Assurance
QC	Quality Control
RAB	Restoration Advisory Board
RBC	Risk-Based Concentration
RI	Remedial Investigation
SARA	Superfund Amendments and Reauthorization Act
SRORP	Soil Remediation Objective for Residential Properties
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
TCL	Target Compound List
USEPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

1.0 DECLARATION

1.1 SITE NAME AND LOCATION

Site 16 – Navy Small Arms Range, Bldg. 61
Former Naval Air Station (NAS) Glenview, Glenview, IL

1.2 STATEMENT OF BASIS AND PURPOSE

This Decision Document presents the selected remedy for Site 16. This document was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA) and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the Administrative Record file for this site.

The State of Illinois [Illinois Environmental Protection Agency (EPA)] concurs with the selected remedy.

1.3 ASSESSMENT OF THE SITE

Based on an assessment of current conditions and the removal of lead-contaminated soil, no pathways remain that pose a threat, current or future, to human health or the environment.

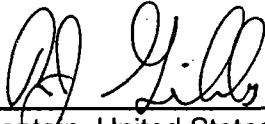
1.4 DESCRIPTION OF THE SELECTED REMEDY

No additional remedial action under CERCLA is necessary for Site 16. Therefore, the selected remedy for this site is no further action. This involves taking no further measures to address the environmental media at Site 16, including no further investigation or remediation.

1.5 STATUTORY DETERMINATIONS

An interim remedial action, i.e., a removal (excavation and off site disposal) of lead-contaminated soil, was conducted from November 2002 through December 2002 (Toltest, 2003). As a consequence of these remedial activities, no unacceptable risks, current or future, exist at the site, and, therefore, no further remedial action is a necessary and no five-year review will be required. The selected remedy of "No Further Action" satisfies all CERCLA requirements and meets all Applicable or Relevant and Appropriate Requirements (ARARs).

1.6 AUTHORIZING SIGNATURES



R. J. Gibbs, Captain, United States Navy, CEC
Commander, Naval Facilities Engineering Command Midwest

09 JUN 2008
Date



Douglas P. Scott, Director
Illinois Environmental Protection Agency

July 30, 2008
Date

2.0 DECISION SUMMARY

2.1 SITE NAME, LOCATION, AND DESCRIPTION

Site 16 is associated with Naval Station Great Lakes but is actually located on the former NAS Glenview, which has closed as a result of Base Realignment and Closure (BRAC). The former NAS Glenview consisted of 1,120 acres in Cook County, Illinois, approximately 20 miles north of downtown Chicago and five miles west of Lake Michigan (Figure 2-1). Site 16 was a small arms training and storage facility located in the north-central portion of the former NAS Glenview, along Avenue E (Figure 2-2).

To prepare for transferring the closing portion of the base to the public, a fence-to-fence Environmental Baseline Survey (EBS) was submitted to Naval Facilities Engineering Command (NAVFAC) Southern Division. During the EBS, each facility/site was surveyed via a physical walk-through, and records were reviewed to determine a site's potential for releasing hazardous materials, hazardous waste, and/or petroleum products into the environment. The Navy Small Arms Range, F061, was identified during this process and was investigated under the BRAC program using cleanup funds provided by the Department of Defense (DoD).

Upon transfer of the bulk of the NAS Glenview property to the public in 2000, F061 was still under investigation. As a result, this portion of the property was transferred instead to Naval Station Great Lakes. F061 then became Site 16 and was transferred to the Installation Restoration Program for the remainder of the investigation and remediation. The Navy remained the lead agency and the Illinois Environmental Protection Agency (Illinois EPA) remained a supporting agency throughout the investigation and cleanup of Site 16.

Site 16, is comprised of Building 61, now torn down, and an area outside the building that was contaminated with lead (Figure 2-3).

2.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES

Building 61 was constructed in 1942 by the Navy as an indoor small arms firing range and was used for this purpose until the base ceased operation in 1995, a period of over 50 years. During the BRAC environmental investigations, it was concluded that the building and surrounding area, Site 16, warranted further investigation due to the likelihood that lead particles had been transported outside the building by ventilation systems, cleaning activities, and pedestrian traffic.

2.3 HIGHLIGHTS OF COMMUNITY PARTICIPATION

A Community Relations Plan (CRP) was developed for NAS Glenview in 1995. A Restoration Advisory Board (RAB) was also active during the BRAC process at NAS Glenview. The RAB provided the public with avenues to participate in the BRAC process at NAS Glenview and at Site 16.

Site 16 was subsequently transferred to Naval Station Great Lakes, which does not have a CRP in place for Site 16. A Proposed Plan for Site 16 was published, for public review and comment that described the investigation, removal action and the proposed No Further Action remedy. See Section 3.0 for details relating to comments received from the public.



Figure 2 - 1: Naval Air Station Glenview Vicinity Map



Figure 2 - 2: Site 16 Vicinity Map

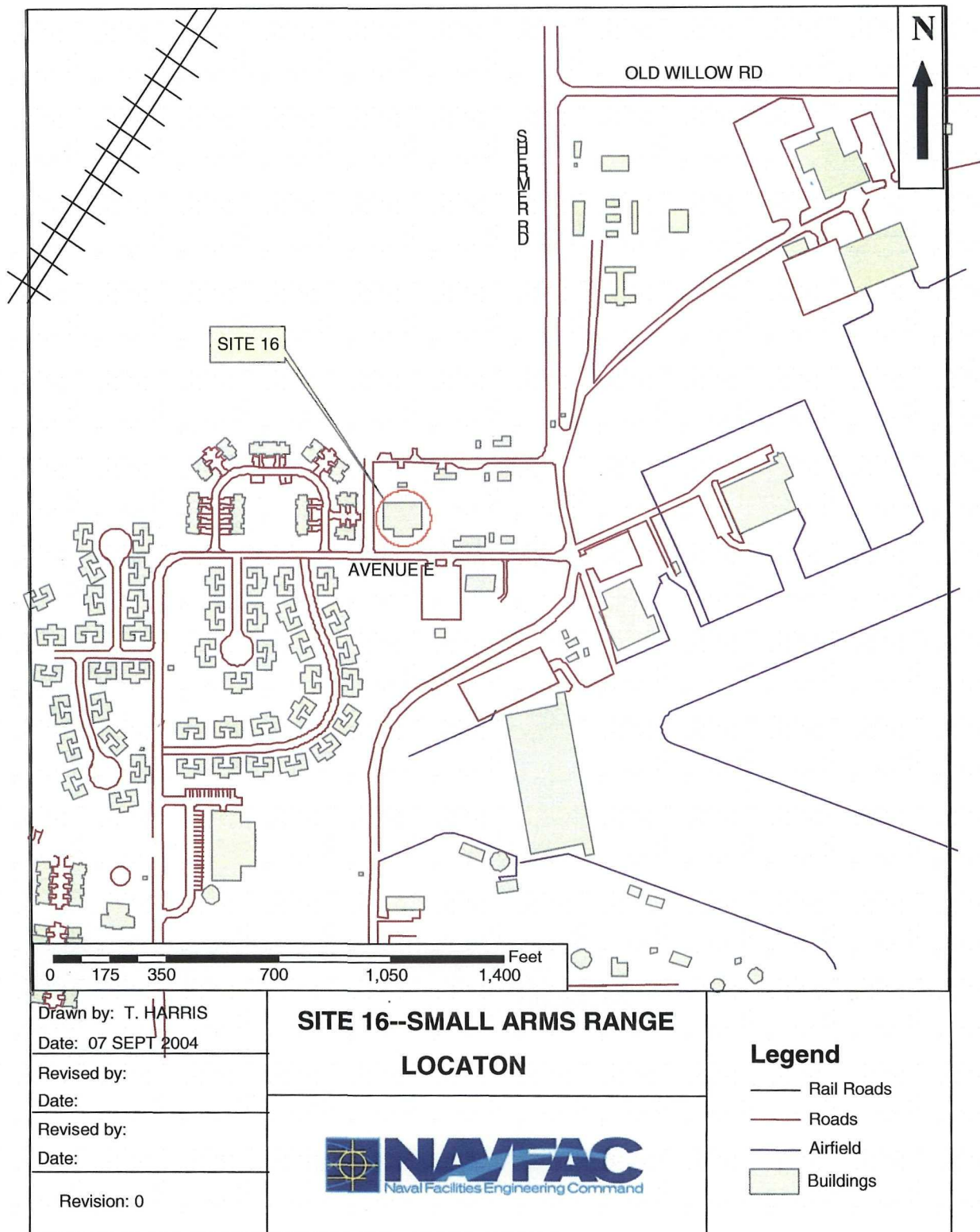


Figure 2 - 3: Site 16 Location Map

Since a public comment period took place and no additional action is proposed, a public meeting is not required for this No-Action Record of Decision.

2.4 SCOPE AND ROLE OF ACTION

A Remedial investigation was performed at Site 16 as part of the following studies:

- Gray Sites Phase I Investigation, 1995.
- Group III Further Action Sites Investigation, 1997.
- Group IV Further Action Sites Investigation, 1998.

Additional sampling was conducted in 2001 to complete the delineation of the lead-contaminated soil and to define the limits of the required excavation. The results of this most recent study are presented in a Technical Memorandum entitled "Former Navy Small Arms Indoor Firing Range, Site History and Discussion of Contamination" (EnSafe, 2001).

These studies showed that two areas in the vicinity of Building 61 required excavation, up to two feet in depth. A work plan for removal of the contaminated soil was approved in July 2002 and implemented in November-December 2002. Approximately 907 cubic yards of lead-contaminated soil were excavated and transported off-site for disposal. This action is documented in the "Remedial Action Completion Report" (Toltest, 2003). Following the removal action, it was concluded that Site 16 posed no threat to public health or the environment, indicating that no further remediation is necessary at this site. A remedy of no further action was selected ensuring the protection of human health and the environment.

2.5 SUMMARY OF SITE CHARACTERISTICS

2.5.1 GEOLOGY

Site 16 is associated with Naval Station Great Lakes, but is located on the former NAS Glenview property. Site 16 is in the central portion of the Central Lowland Province; a glacial lowland bordering the Appalachian Plateau on the east, the Great Plains on the west, the Superior Upland on the north, and the interior Low Plateau and Ozark Plateau on the south. Site 16 is in the Great Lakes Section, a subdivision of the Central Lowland Province. It is situated over the divide of two subsections of the Great Lakes Section, the Chicago Lake Plain and Wheaton Morainal County, which consists of features associated with continental glaciers such as rough knob-and-kettle topography, kame and kame terraces, eskers, and lakes. The Chicago Lake Plain is approximately 45 miles long and 15 miles wide, covering roughly 450 square miles, and has low, gently sloping ridges which are usually less than 20 feet high. The area is characterized by exceptionally flat topography and unconsolidated lake-type sediment deposits, features characteristic of the Chicago Lake Plain.

Most surface soil in the area drains poorly and has a high moisture-holding capacity. This characteristic is supported by data from topographic maps showing areas in and around the former NAS Glenview to have been marshes and wetlands before 1940. Due to landscaping, grading, and construction, few areas on the former base retain their original soil cover. Eleven primary surface soil types are found on the base: sygert, bryce, mokena, frankfort, peotone, pella, mundelein, symerton, land type, ashkum, and wauconda (Ensafe/Allen & Hoshall, 1995).

2.5.2 HYDROGEOLOGY

An Illinois State Water Survey of well logs within two miles of the former NAS Glenview indicates Silurian age bedrock composed primarily of dolomites beginning at an elevation of approximately 550 feet above mean sea level. The Silurian bedrock extends less than 370 feet in the area. The thickness of the glacial till, which overlies the Silurian bedrock and varies from 100 to 150 feet thick in the area, is characterized by silty clay with sand and gravel lenses. The Ordovician system, which is below the Silurian system, averages about 800 feet in thickness. The Ordovician system is predominantly composed of dolomite and limestone; the system surface originates at approximately 370 feet below the surface and extends to more than 1,000 feet. The Ordovician system contains the St. Peter Sandstone, also known as the Anceil Aquifer, which consists of fine- and coarse-grained sandstones with dolomite and shale on top, grading to fine and medium sandstone with red shale. Several wells within two miles of the former base have been completed into this aquifer. Underlying the Ordovician is the Cambrian system, which is approximately 90% sandstone with persistent dolomite strata. The sand composing most of the Cambrian rocks in Illinois was deposited in a marine embayment. Qualities of the sand grains and features of the sand from the Cambrian suggest its origin from sandstones of the pre-Cambrian or early Cambrian period. Pre-Cambrian rock lies beneath the Cambrian ranging from 2,500 to 3,500 feet below the surface in northeastern Illinois.

Groundwater resources in northern Illinois are derived from three aquifer systems: sand and gravel deposits of the glacial drift; shallow dolomite aquifers of the Silurian and Ordovician ages; and sandstone aquifers of the Cambrian and Ordovician ages.

The surface water system for the former NAS Glenview consisted of a network of storm sewers, tiles, drainage ditches, and culverts. The system ultimately discharged into the West Fork of the North Branch of the Chicago River. The former base lies in the West Fork-North Branch of the Chicago River Watershed. The West Fork flows 16 miles from its source near Lake Forest to the North Branch of the Chicago River in Morton Grove. It has a drainage area of 30 square miles and an average slope of 2 feet per mile. The West Fork is within 2,000 feet of the North Branch of the Chicago River. A portion of this floodplain is in the southeast corner of the base. Flood-prone areas are common along natural and man-made drainage channels, including storm water detention basins.

2.5.3 NATURE AND EXTENT OF CONTAMINATION

2.5.3.1 Soil

Because Site 16 has always been used as a small arms firing range and no other hazardous substances were stored at the facility, only Target Analyte List (TAL) metals were identified as potential contaminants of concern at Site 16. Volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs) are not site-related constituents for Site 16 and were not added to the analyte list for sampling.

Soil samples were collected at the 3-acre site in five phases to characterize the extent of lead contamination. Analytical results of soil sampling are summarized in the *Sampling and Analysis Work Plan for Site F061* [Site 16] (EnSafe, 2001) and a technical memorandum entitled *Naval Air Station Glenview, Site F061 [Site 16] Delineation Sampling* (EnSafe, June 12, 2001).

Samples collected in the initial sampling event in 1995 were analyzed for TAL metals. Arsenic and lead were detected above the Modified Risk-Based Concentrations (MRBCs) and the background reference values established for NAS Glenview.

A single detection of arsenic (10.1 mg/kg) marginally exceeded the background reference values established for NAS Glenview (9.79 mg/kg). Because this value so marginally exceeded the established background reference value for arsenic at NAS Glenview and fell within the Illinois EPA background values for arsenic (1.1 – 24 mg/kg), the BRAC Closure Team (BCT) concluded that arsenic detected onsite is naturally occurring and does not warrant further concern. All subsequent samples at Site 16 were analyzed for lead only.

Initial sampling events at Site 16 also revealed that lead contamination existed in areas adjacent to the building's paved walkways near exhaust vents, as expected. Lead concentrations ranged from 147 to 2,080 mg/kg. In the next three rounds of sampling, 75 samples were taken from 0 to 6 inches bgs, 4 samples were taken from 6 to 12 inches bgs, and 71 samples were taken from 12 to 18 inches bgs. The sampling defined the extent of the lead-contaminated soil in the four areas of concern. Maps of the sample locations and defined removal area are included in Appendix A.

There were also 40 confirmatory soil samples collected after excavation of the lead-contaminated soil. Post-excavation confirmation samples indicated that lead concentrations were acceptable. The highest concentration of lead detected in a confirmation sample was 170 mg/kg, well below the cleanup action level concentration of 400 mg/kg.

2.5.3.2 Groundwater

Subsurface investigations at the former NAS Glenview, from which groundwater information can be derived, were conducted to the south, northeast, and east of Site 16. These investigations include the background groundwater investigation conducted by Environment & Ecology (*Final Groundwater Classification Report*, 1996) and groundwater evaluations associated with the remedial investigation (RI) at nearby sites S001, F117, and Installation Restoration Program (IRP) Site 3, conducted in 1996. The RI evaluations are presented in the following document prepared by EnSafe/Allen and Hoshall: Stratigraphic Investigation Technical Memorandum for Sites F117, S001, and IRP Site 3, which concludes, "...no continuous, classifiable water-bearing units were encountered at any of the three sites or across NAS Glenview." These documents demonstrate that the soil, from the surface to 80 to 100 feet bgs, consists primarily of highly impermeable clayey glacial tills which contain no classifiable water-bearing units. It is the Navy's position, based on the findings presented in this memorandum that no pathway to groundwater exists at Site 16.

2.6 SUMMARY OF SITE RISKS

A risk screening assessment was conducted at Site 16 as part of the first sampling event (Gray Sites Phase I Investigation). All samples were analyzed for TAL metals and results were compared to background soil concentrations and with a list of risk-based concentrations, the MRBC tables. Chemicals exceeding the background soil concentrations were considered to be contaminants of potential concern (COPCs) and were then screened against the MRBC values.

The NAS Glenview BCT developed the risk-based concentrations for screening gray sites. The MRBC table is based on the United States Environmental Protection Agency (USEPA) Region 3 Risk-Based Concentration (RBC) values for chemicals in residential soil for a 10^{-6} cancer risk or Hazard Quotient (HQ) of ≤ 1 . The Illinois EPA and USEPA Region 5 modified the RBC table to make it more protective. Specifically, they stipulated that dermal absorption be included for certain compounds, where toxicological data allowed this to be done, and required that the soil concentrations protective of the soil-to-air and soil-to-groundwater pathways be used when they were lower than the soil concentrations for ingestion/dermal contact. The Navy further improved the table by having E/A&H's risk assessors calculate concentrations, where possible, for the few chemicals on the standard Target Compound List (TCL) pesticide organics analytes, which did not have the RBC values. These values were reviewed and approved by Illinois EPA and USEPA.

For Site 16 and other sites at the former NAS Glenview, it was determined that the soil-to-groundwater pathway was not present (see discussion in Section 2.4.3.2, Groundwater, above). Therefore, the values in the MRBC table that were used to screen samples from Site 16 do not consider soil concentrations protective of the soil-to-groundwater pathway.

During the Gray Sites Phase I Investigation, arsenic and lead were detected above background and MRBC values. Arsenic was detected at 10.1 mg/kg at one location, marginally exceeding the background reference values established for NAS Glenview (9.79 mg/kg). Because this value so marginally exceeded the established background reference value for arsenic at NAS Glenview and fell within the Illinois background values for arsenic (1.1 – 24 mg/kg), the BCT concluded that arsenic detected onsite is naturally occurring and does not warrant further concern.

Detected concentrations of lead were compared with background values and its MRBC concentration of 400 mg/kg, which was designated as the cleanup concentration. Of the ten samples, detections ranged from 147 to 2,080 mg/kg, and four had concentrations exceeding the cleanup action level concentration of 400 mg/kg. Three more sampling events defined two areas of lead-contaminated soil.

Figure 4 in Appendix B shows the approximate areas of the excavation. Based on the investigation analytical results, lead was present above the Illinois EPA 400 milligrams per kilogram (mg/kg) Tier 1 Soil Remediation Objective for Residential Properties (SRORP) to a depth of approximately 2 feet in both the East and West Excavation Areas. The East Excavation Area extended from the east building wall to approximately 100 feet east, and extending approximately 70 feet south of the southeastern corner of the building. The East Excavation Area also included a small area, approximately 10 x 15 feet at the northeast corner of the building. 892 cubic yards (CY) of lead-impacted soil were removed from the eastern excavation area. The West Excavation Area was adjacent to the southwest corner of Building 61. It was an area that extended approximately 15 feet west, approximately 25 feet north and a few feet south of the southwest corner of the building. Approximately 15 CY of lead-impacted soil was removed from the West Excavation Area.

In November-December 2002, approximately 907 CY of lead-contaminated soil was excavated and transported to an off-site landfill for disposal. A total of forty confirmation samples were collected from excavation floors and sidewalls, none of which exceeded the cleanup action level concentration of 400 mg/kg (see Appendix B). The results and map of the confirmation sampling are included in Appendix A.

As a consequence of these remedial activities, no unacceptable risks remain associated with Site 16, and, therefore, no further remedial action is necessary to protect human health and the environment.

2.7 CURRENT AND FUTURE LAND USE

The Navy constructed Site 16, or Building 61, as it was formerly known, in 1942 as an indoor small arms firing range. It was used for this purpose until the base ceased operation in 1995. On January 1, 2006, all real property which the Navy still owned at the former NAS, including Site 16, was placed under 50 year lease to a Public Private Venture (PPV) Military Housing Limited Liability Company (LLC) for continued use for military housing or sale for revenue for PPV Housing. However, since Site 16 was still under investigation, it was placed in the Navy's Installation Restoration Program for remediation.

Prior to January 2006, the Navy completed the investigation and removed contaminated soils. Except for the remediation, Site 16 has not been used for the past several years. The PPV LLC is currently redeveloping the area and plans to sell part of the PPV LLC property. It is anticipated that the land containing Site 16 will be sold or transferred to the City of Glenview in the future.

Because the contaminated soils were removed, and there are no current or future unacceptable risks to human health or the environment associated with Site 16, this land will be available for unrestricted use.

3.0 RESPONSIVENESS SUMMARY

A Proposed Plan for Site 16 was released for public comment on November 26, 2004. The Navy solicited input from the public during the public comment period of November 26 to December 29, 2004 to encourage public participation in the selection process.

3.1 COMMUNITY PREFERENCES

No public comments were received during the public comment period and one community member requested a copy of the Proposed Plan. The Illinois EPA provided comments, to the Navy, on the Proposed Plan.

3.2 INTEGRATION OF COMMENTS

The Navy concurred with the Illinois EPA comments and incorporated the comments into this document.

3.3 COMMENT RESOLUTION

The Administrative Record File for Site 16 contains a record of the Illinois EPA comments and the responses to the comments (see Appendix C). The comments have been incorporated into this Decision Document.

REFERENCES

REFERENCES

Ecology and Environment, 1995. *Final Groundwater Classification Report*, prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina.

EnSafe, 2001. *Sampling and Analysis Work Plan for Site F061 [Site 16]*. Prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina.

EnSafe, June 12, 2001. Technical memorandum. *Naval Air Station Glenview, Site F061 [Site 16] Delineation Sampling*, prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina.

EnSafe, June 12, 2001. Technical memorandum. *Naval Air Station Glenview, Former Navy Small Arms Indoor Firing Range Site History and Discussion of Contamination*, prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina.

Ensafe/Allen & Hoshall, 1995. *Final Gray Sites Work Plan Phase 1, NAS Glenview*, prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina.

Ensafe/Allen & Hoshall, 1996. *Final Gray Sites Phase I Report, NAS Glenview*, prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina.

Ensafe/Allen & Hoshall, 1996. *Stratigraphic Evaluation Technical Memorandum for Sites F117, S001, and IRP Site 3*, prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina.

Toltest, Inc., 2003. *Remedial Action Completion Report—Removal and Disposal of Contaminated Soil, Building 61 Demolition Site*, prepared for Southern Division, Naval Facilities Engineering Command, North Charleston, South Carolina.

APPENDICES

APPENDIX A

PRE-REMOVAL LEAD CONTAMINATION LOCATIONS

Figure A-1. Sample Locations for Lead Contamination Areas (Ensafe, 2001)

Figure A-2. Proposed Soil Removal Areas (Ensafe, 2001)

A-2

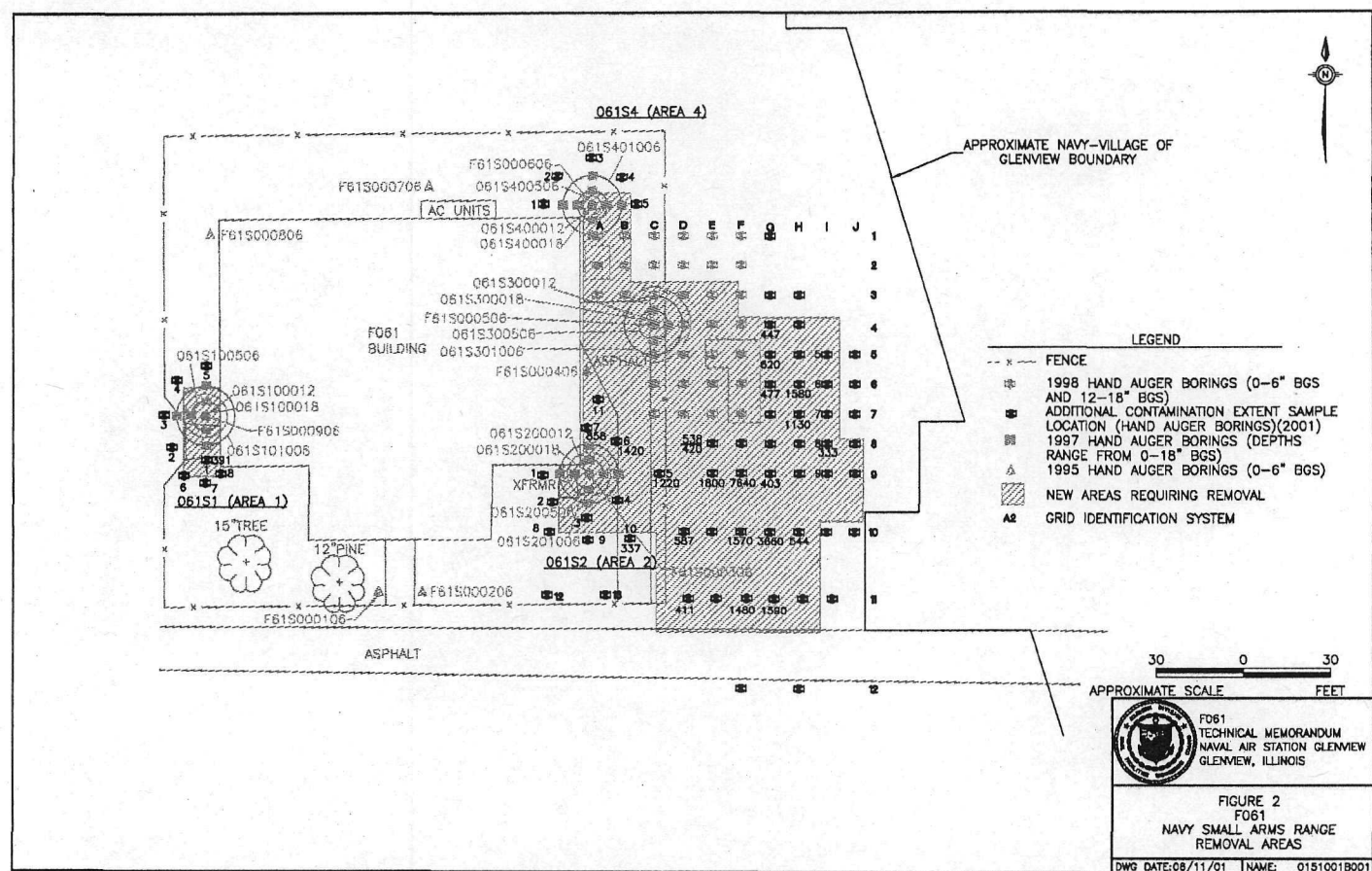


Figure A-1. Sample Locations for Lead Contamination Areas (Ensaf 2001)

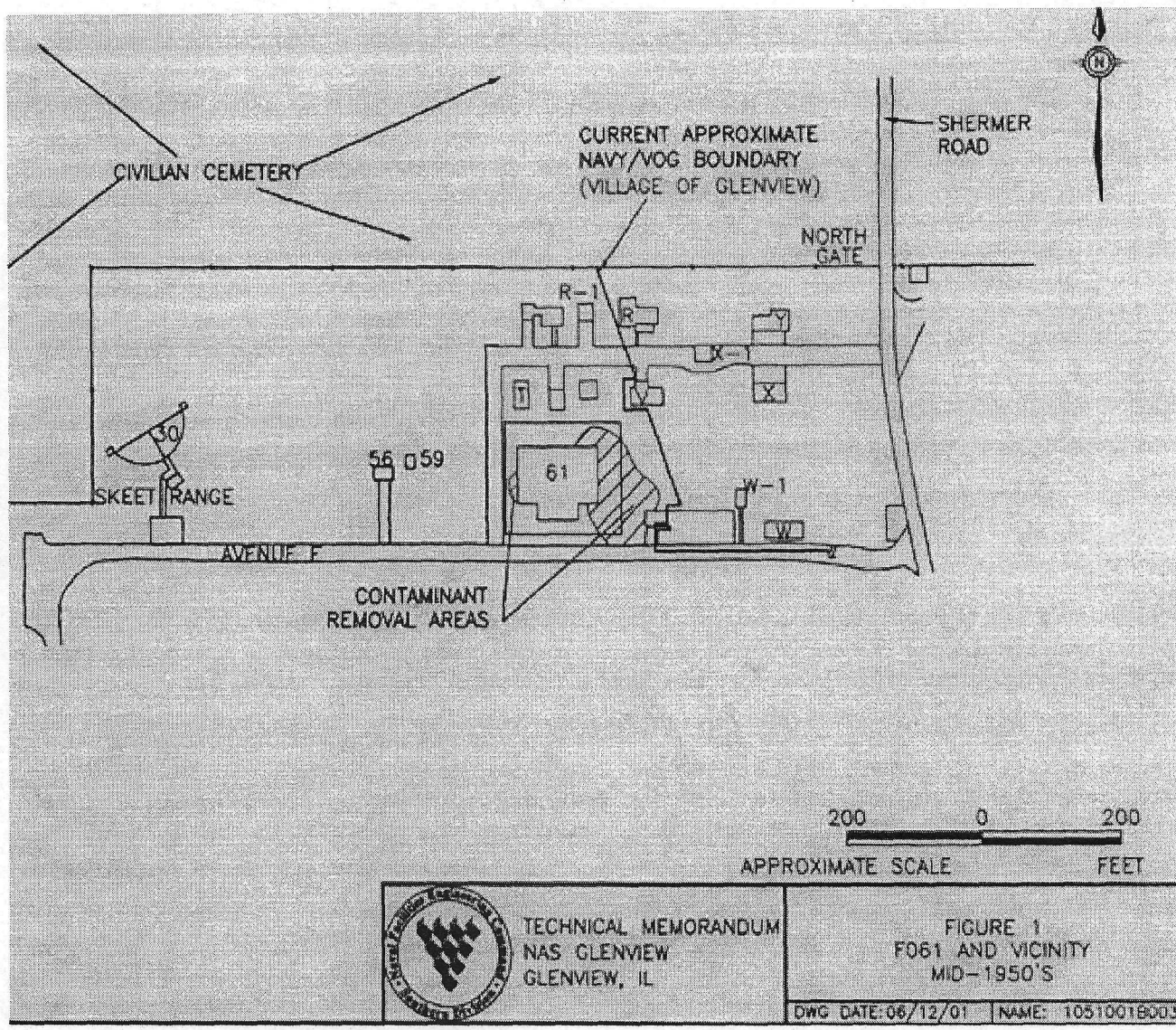


Figure A-2. Proposed Soil Removal Areas (Ensafe, 2001)

APPENDIX B

Excerpt from *Remedial Action Completion Report—Removal and Disposal of Contaminated Soil, Building 61 Demolition Site* (TOLTEST, 2003—Revised 2007): *Section 5.0 Post-Excavation Confirmation Sampling and Analysis*

Final Remedial Action Completion Report
 E/OC Contract No. N68950-00-D-0200, DO 0045
 GNAS, Building 61 Removal and Disposal of Contaminated Soil
 ToTest Project No. 42117.01
 December 2003

TO TEST INC.



5.0 POST-EXCAVATION CONFIRMATION SAMPLING AND ANALYSIS

After the excavated soil had been removed from the site, CFS grab samples were obtained from the West and East Excavation Areas in accordance with the approved WP to document that ToTest had removed all the lead-impacted soil identified by EnSafe as requiring removal since the lead concentration in the soils of these areas were above 400 mg/kg.

The CFS were collected in a grid pattern based on the Michigan Department of Environmental Quality Guidance Document for Confirmation Sampling and approved by the IEPA. The West Excavation Area at the southwest corner of the building had a sample separation of approximately 13 to 15 feet. The East Excavation Area had a sample separation of approximately 25 feet; in some areas, the grid lines were less than 25 feet due to the configuration of the excavations. The CFS locations and the grid pattern are documented in **Figure 4**.

A total of 40 CFS grab samples were collected from excavation floors and sidewalls. Thirty-four CFS, including three duplicate soil samples, were obtained from the East Excavation Area. Six CFS, including one duplicate soil sample, were collected from the West Excavation Area.

One grab soil sample was collected from each sample point on the grid utilizing a stainless steel spoon. Samples from the bottom of an excavation were collected from the bottom extent of the excavation to approximately 6 inches below the bottom extent of the excavation. Samples from the perimeter of an excavation were collected approximately 12 to 18 inches below original grade. Each sample was placed in a stainless steel bowl, thoroughly mixed, and separated into equal quadrants. An equal volume of soil from each quadrant was then placed in the same pre-cleaned, 8-oz, clear wide-mouth jar and sealed with a Teflon-lined lid.

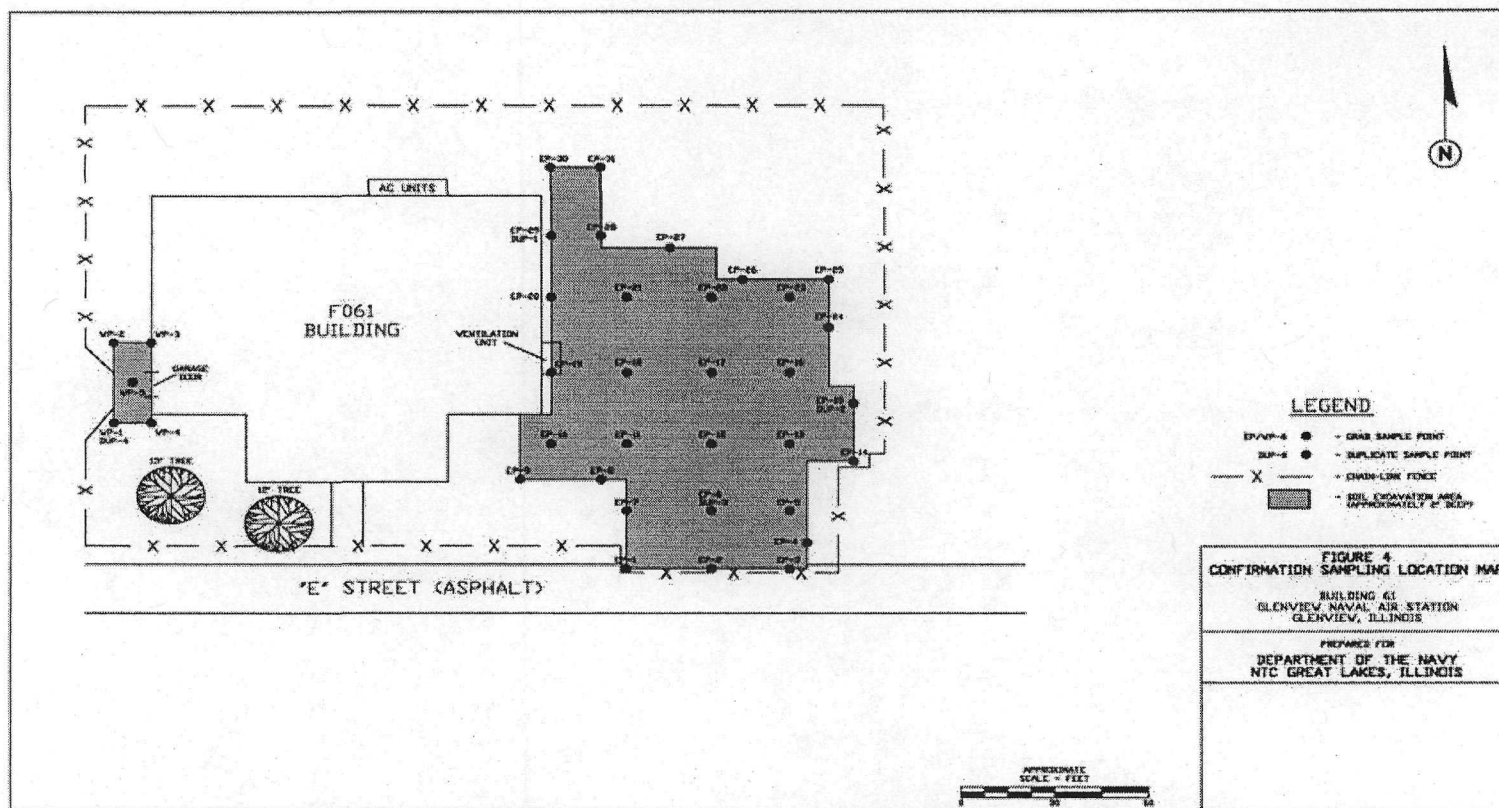
Each CSF was properly numbered, labeled, placed in a cooler filled with ice, and submitted to Severn Trent for total lead analysis. The Severn Trent analytical results are presented in **Appendix I**, and a summary of the analytical results is provided in **Table 4**.

Table 4. Confirmation Sample Analytical Results

CFS Sample Number	Lead	CFS Sample Number	Lead	CFS Sample Number	Lead	CFS Sample Number	Lead
EP-1	20	EP-10	24	EP-19	25	EP-29	43
EP-2	20	EP-11	27	EP-20	17	DUP-1	41
EP-3	17	EP-12	36	EP-21	17	EP-30	16
EP-4	19	EP-13	20	EP-22	27	EP-31	18
EP-5	110	EP-14	34	EP-23	23	WP-1	45
EP-6	32	EP-15	23	EP-24	36	DUP-4	28
DUP-3	50	DUP-2	23	EP-25	20	WP-2	65
EP-7	140	EP-16	92	EP-26	16	WP-3	170
EP-8	14	EP-17	35	EP-27	17	WP-4	45
EP-9	85	EP-18	22	EP-28	23	WP-5	23

Notes:

- 1) All concentrations reported in mg/kg
- 2) EP = East Excavation Area
- 3) WP = West Excavation Area
- 4) DUP-1 = Duplicate of Sample EP-29
- 5) DUP-2 = Duplicate of Sample EP-15
- 6) DUP-3 = Duplicate of Sample EP-6
- 7) DUP-4 = Duplicate of Sample WP-1



Excerpt from *Remedial Action Completion Report:*
Removal and Disposal of Contaminated Soil,
Building 61 Demolition Site (TOLTEST, 2003)

APPENDIX C
RESPONSIVENESS SUMMARY

Navy Response to Illinois Environmental Protection Agency Comments

**RESPONSE TO COMMENTS FROM THE IEPA ON THE
RECORD OF DECISION
SITE 16-NAVY SMALL ARMS RANGE AT NAVAL AIR STATION GLENVIEW
GREAT LAKES NAVAL STATION**

- 1) **Section 1.2, Statement of Basis and Purpose** – The first paragraph should conclude with...as amended by the Superfund Amendments and Reauthorization Act (SARA) and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the Administrative Record file for this site.

Section 1.2 was modified as requested.

- 2) **Section 2.6, Summary of Site Risks** – In the third paragraph on page 2-11, the contaminated area locations need to be described in more detail. To state "...an area of approximately 15 feet from the building..." is not specific enough. Please revise to provide a better visual picture of these areas.

The third paragraph on page 2-11 will modified to include:

Figure 4 in Appendix B shows the approximate areas of the excavation. Based on the investigation analytical results, lead was present above the Illinois Environmental Protection Agency's (IEPA) 400 milligrams per kilogram (mg/kg) Tier 1 Soil Remediation Objective for Residential Properties (SRORP) to a depth of approximately 2 feet in both the East and West Excavation Areas. The East Excavation Area extended from the east building wall to approximately 100 feet east, and extending approximately 70 feet south of the southeastern corner of the building. The East Excavation Area also included a small area, approximately 10 x 15 feet at the northeast corner of the building. 892 cubic yards (CY) of lead-impacted soil were removed from the eastern excavation area. The West Excavation Area was adjacent to the southwest corner of Building 61. It was an area that extended approximately 15 feet west, approximately 25 feet north and a few feet south of the southwest corner of the building. Approximately 15 CY of lead-impacted soil was removed from the West Excavation Area.

- 3) **Section 2.7, Future Land Use** – Suggest changing the section heading to “Current and Future Land Use” and describing what the current land use is and what future land use is expected or proposed.

Section 2.7 will modified to read:

2.7 CURRENT AND FUTURE LAND USE

The Navy constructed Site 16, or Building 61, as it was formerly known, in 1942 as an indoor small arms firing range. It was used for this purpose until the base ceased operation in 1995. On January 1, 2006, all real property which the Navy still owned at the former NAS, including Site 16, was placed under 50 year lease to a Public Private Venture (PPV) Military Housing Limited Liability Company (LLC) for continued use for military housing or sale for revenue for PPV Housing. However, since Site 16 was still under investigation, it was placed in the Navy’s Installation Restoration Program for remediation.

Prior to January 2006, the Navy completed the investigation and removed contaminated soils. Except for the remediation, Site 16 has not been used for the past several years. The PPV LLC is currently redeveloping the area and plans to sell part of the PPV LLC property. It is anticipated that the land containing Site 16 will be sold or transferred to the City of Glenview in the future.

Because the contaminated soils were removed, and there are no current or future unacceptable risks to human health or the environment associated with Site 16, this land will be available for unrestricted use.

- 4) **Appendix A** – Illinois EPA suggests including a figure to identify all sample locations used to delineate the extent of the lead contamination. A good example would be Figure 2 from the June 12, 2001 Ensafé Technical Memorandum, which was provided in Appendix A of the Remedial Action Completion Report for this site. Rather than just adding another figure, suggest replacing the second figure here with the referenced one. Also, the figures provided in this appendix are not numbered for this report. They are still identified by the number from their original report. They should be re-labeled for this report for ease of reference.

The first two figures in Attachment A, figures labeled “Figure 5-1” and “Figure 1” will be replaced with Figure 2 from the June 12, 2001 Ensafé Technical Memorandum.

The figures will also be relabeled and renumbered to fit the report.

- 5) Please add a signature block for the Director of Illinois EPA. That block should read as follows: Douglas P. Scott, Director Illinois Environmental Protection Agency

Comment incorporated.